

Date: Wednesday, 1/23/2008 11:25:11 AM  
 User: Kim Johnston

## Process Sheet

6

|   |                                     |
|---|-------------------------------------|
| Customer : CU-DAR001 Dart Helicopters Services          | Drawing Name : SKIDTUBE ASSEMBLY    |
| Job Number : 36895                                      |                                     |
| Estimate Number : 10022                                 |                                     |
| P.O. Number :   | Part Number : D205634011            |
| This Issue : 1/23/2008 S.O. No. :                       | Drawing Number : N/A                |
| Prsht Rev. : NC   | Project Number : N/A                |
| First Issue : / / Type : LANDING GEAR                   | Drawing Revision : N/A              |
| Previous Run : 36894                                    | Material :                          |
| Written By :  | Due Date : 2/7/2008 Qty: 1 Um: Each |
| Checked & Approved By : <u>JS 08 01 23</u>              |                                     |
| Comment : Est Rev:P 02.08.28 Removed QC5 from Step 5 KJ |                                     |

## Additional Product

Job Number:



|         |                       |               |
|---------|-----------------------|---------------|
| Seq. #: | Machine Or Operation: | Description : |
|---------|-----------------------|---------------|

|     |    |                  |
|-----|----|------------------|
| 1.0 | DC | DOCUMENT CONTROL |
|-----|----|------------------|



Comment: DOCUMENT CONTROL

Photocopy bluefile &amp; type labels per PPP D205-634-011 CHG005

KS 08.01.25 (1)

|     |        |                    |
|-----|--------|--------------------|
| 2.0 | 36895A | SKID TUBE ASSEMBLY |
|-----|--------|--------------------|



Comment: Sub-Component SKID TUBE ASSEMBLY

D205-634-041 B 36895A

AS 08/02/06

(X)

|     |             |                       |
|-----|-------------|-----------------------|
| 3.0 | PACKAGING 1 | PACKAGING RESOURCE #1 |
|-----|-------------|-----------------------|



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

|     |        |                         |
|-----|--------|-------------------------|
| 4.0 | K10003 | D205-634-011 Saddle Kit |
|-----|--------|-------------------------|



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 K10003 Saddle Kit

36307

AS 08/02/06

(X)

|     |     |                                    |
|-----|-----|------------------------------------|
| 5.0 | QC4 | INSPECT 100% KITS FOR COMPLETENESS |
|-----|-----|------------------------------------|



Comment: INSPECT 100% KITS FOR COMPLETENESS

AS 08/02/06 (1)

|     |             |                       |
|-----|-------------|-----------------------|
| 6.0 | PACKAGING 1 | PACKAGING RESOURCE #1 |
|-----|-------------|-----------------------|



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-634-011

Location: ~~PP 36895~~ Rev #5

AS 08/02/06 (1)

| W/O: |      | WORK ORDER CHANGES |  |    |      |     |                                     |                          |
|------|------|--------------------|--|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   |  | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |  |    |      |     |                                     |                          |
|      |      |                    |  |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: P Date: 08/02/07  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                                |                                 |                |                           |                       |                          |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action<br>Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng           | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |

NOTE: Date & initial all entries

Date: Wednesday, 1/23/2008 11:25:11 AM

User: Jim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKIDTUBE ASSEMBLY

Job Number: 36895

Part Number: D205634011

Job Number:



Seq. #:

Machine Or Operation:

Description :

7.0

QC21

FINAL INSPECTION/W/O RELEASE



①

Comment: FINAL INSPECTION/W/O RELEASE

2008/02/07

Job Completion



2008/2/06 ①  
N

36895 A

| W/O: |      | WORK ORDER CHANGES |  |    |      |     |                                     |                          |
|------|------|--------------------|--|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   |  | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |  |    |      |     |                                     |                          |
|      |      |                    |  |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                                |                                 |                |                           |                       |                          |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action<br>Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng           | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

Date: Wednesday, 1/23/2008 11:25:36 AM  
User: Kim Johnston

# Process Sheet

6

|                       |  |                  |                             |
|-----------------------|--|------------------|-----------------------------|
| Customer              | : CU-DAR001 Dart Helicopters Services                                | Drawing Name     | : SKID TUBE ASSEMBLY        |
| Job Number            | : 36895A   |                  |                             |
| Estimate Number       | : 10023  |                  |                             |
| P.O. Number           | :  | Part Number      | : D205634041                |
| This Issue            | : 1/23/2008 S.O. No. :   | Drawing Number   | : D2580 REV D               |
| Prsht Rev.            | : NC   | Project Number   | : N/A                       |
| First Issue           | : 1/1 Type : LANDING GEAR  | Drawing Revision | : D                         |
| Previous Run          | : 36894A   | Material         | :                           |
| Written By            | :  | Due Date         | : 1/29/2008 Qty: 1 Um: Each |
| Checked & Approved By | : <u>1080123</u>   |                  |                             |
| Comment               | : Est Rev. N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ |                  |                             |
|                       | : Est Rev. O 06.02.28 Added paperwork EC                             |                  |                             |
|                       | : Est Rev. P 07-07-09 SS Wearplates & Gaskets JLM                    |                  |                             |

## Additional Product

Job Number:



|         |                       |               |
|---------|-----------------------|---------------|
| Seq. #: | Machine Or Operation: | Description : |
|---------|-----------------------|---------------|

|     |    |                  |
|-----|----|------------------|
| 1.0 | DC | DOCUMENT CONTROL |
|-----|----|------------------|



Comment: DOCUMENT CONTROL

Photocopy D205-634 bluefile & type labels per PPP D205-634 CHG002

NA

|     |           |                        |
|-----|-----------|------------------------|
| 2.0 | D25001190 | Ext'n -1' Beam Tube 4" |
|-----|-----------|------------------------|



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

|     |             |                     |        |
|-----|-------------|---------------------|--------|
| Qty | Part Number | Description         | Batch  |
| 1   | D2500-1-190 | Skid Tube Extrusion | B34729 |

a.m 08.01.28 ①

|     |       |         |
|-----|-------|---------|
| 3.0 | D2596 | 205 Web |
|-----|-------|---------|



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

|     |             |             |        |
|-----|-------------|-------------|--------|
| Qty | Part Number | Description | Batch  |
| 1   | D2596       | 205 Web     | B36872 |

a.m 08.01.28 ①

|     |                |                         |
|-----|----------------|-------------------------|
| 4.0 | LANDING GEAR 1 | LANDING GEAR RESOURCE 1 |
|-----|----------------|-------------------------|



Comment: LANDING GEAR RESOURCE 1

1- Inspect mat'l D2500-1-190 for damage a.m 08.01.28 ①

2-Cut D2500-1-190 per Dwg D2580 if necessary Debur ends a.m 08.01.24 ①

3-Acid etch and Alodine tube per QSI 005 4.1 5 8-1-24

| W/O: |      | WORK ORDER CHANGES |  |    |      |     |                                     |                          |
|------|------|--------------------|--|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   |  | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |  |    |      |     |                                     |                          |
|      |      |                    |  |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                      |                                 |                |                           |                       |                          |
|------|------|----------------------------------|----------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action    |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                      |                                 |                |                           |                       |                          |
|      |      |                                  |                      |                                 |                |                           |                       |                          |
|      |      |                                  |                      |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

Date: Wednesday, 1/23/2008 11:25:36 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 36895A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

BE 08/01/28

6.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill pilot holes using drill jig DT 8149(Do not use cutting fluid)

a.m. 08.01.28 ①

2-Open holes to 0.500" as per Dwg D2580without cutting fluid

a.m. 08.01.28 ①

3-Countersink holes as per Dwg D2580without cutting fluid

a.m. 08.01.28 ①

4-Deburr and blow out all chips from inside of tube

a.m. 08.01.28 ①

5-Bond web in place per QSI 015. Allow 12 Hrs. cure time before cutting

Pick:

Qty Part Number Description Batch

A/R Sikaflex-291 M105469

Sikaflex expire date: 01.08

Start Time: 10:45 Date: 08.01.28

Fin Time: 10:45 Date: 8-1-29

a.m. 08.01.28 ①

7.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

1-Bend as per program D2580.C on CNC Bender and Folio FT009

2-Cut tubes as per Dwg. D2580

BE/H 8-1-29

8.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Deburr ends

2-Prepare tube for welding, remove alodine as required.

FL 8-1-29

| W/O: |      | WORK ORDER CHANGES |  |    |      |     |                                     |                          |
|------|------|--------------------|--|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   |  | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |  |    |      |     |                                     |                          |
|      |      |                    |  |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                                |                                 |                |                           |                       |                          |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action<br>Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng           | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |

NOTE: Date & initial all entries



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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 36895A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description:

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*See lab (H)*

10.0

D25763

Step (Machining Detail)



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty

Part Number

Description

Batch

1

D2576-3

Step

*B33321-1*

*BE 08/01/31*

11.0

D2579

Crossbolt Spacer



Comment: Qty.: 20.0000 Each(s)/Unit Total: 20.0000 Each(s)

Pick:

Qty

Part Number

Description

Batch

20

D2579

Spacers

*B36326*

*BE 08/01/29*

12.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

2-Weld step D2576 as per Dwg. D2580 and QSI 004

A/R

Aluminum Rod

*M 106390*

*BE 08/01/31*

3-Weld crossbolt spacers D2579 as per Dwg. D2580 and QSI 004.

For D2579 spacers, weld one side, pass 3/8" drill, weld other side, pass 3/8" drill

A/R

Aluminum Rod

*M 106390*

*BE 08/01/29*

4-Grind welds as per Dwg D2580 Grind flush ridge made from bending

*a.m 08.01.300*

5-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64", adjust stopper not to hit web. Deburr

*a.m 08.01.300*

6-Counterbore crossbolt spacers to 7/16" ID x 1.0" deep as per Dwg D2580. Deburr holes

*a.m 08.01.300*

7-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Deburr

*a.m 08.01.300*

8-Drill pilot holes for Tow ring using DT8091, open to .640" and Deburr

*a.m 08.01.300*

| W/O: |      | WORK ORDER CHANGES |  |    |      |     |                                     |                          |
|------|------|--------------------|--|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   |  | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |  |    |      |     |                                     |                          |
|      |      |                    |  |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                                |                                 |                |                           |                       |                          |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action<br>Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng           | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |

NOTE: Date & initial all entries

Date: Wednesday, 1/23/2008 11:25:36 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 36895A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

AD 08-02-01 (1)

14.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08/02/01 (1)

15.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Pressure wash as per QSI 005

M. H.

08/02/01

(1X)

16.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

11106379

BR 08-02-01

(1)

17.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

M. H. 08/02/04

(1X)

18.0

D2855

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Cap

Batch:

B35972

BR

19.0

AN35A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Batch:

M100188

BR

20.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Washer

Batch:

M104885

BR

BR 08-02-04 (1)

| W/O: |      | WORK ORDER CHANGES |  |    |      |     |                                     |                          |
|------|------|--------------------|--|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   |  | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |  |    |      |     |                                     |                          |
|      |      |                    |  |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                                |                                 |                |                           |                       |                          |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action<br>Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng           | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

Date: Wednesday, 1/23/2008 11:25:36 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 36895A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description:

\*

21.0

ALS71032130

Insert



ALS41032130 min 2008/2/06



Comment: Qty.: 50.0000 Each(s)/Unit Total: 50.0000 Each(s)

Insert

Batch: M105729

BR

22.0

AN3C4A

BOLT



Comment: Qty.: 50.0000 Each(s)/Unit Total: 50.0000 Each(s)

BOLT

Batch: M106883

BR

23.0

AN960C10L

washer



Comment: Qty.: 50.0000 Each(s)/Unit Total: 50.0000 Each(s)

washer

Batch: M106883

BR

24.0

D356613

GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

GASKET

Batch: B32744

BR

25.0

D35665

GASKET



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

GASKET

Batch: B36526

BR

26.0

D35661

GASKET



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

GASKET

Batch: B36280

BR

27.0

D356413

WEARSHOE



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

WEARSHOE

Batch: B33867

BR

08-02-04

| W/O: |      | WORK ORDER CHANGES |  |    |      |     |                                     |                          |
|------|------|--------------------|--|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   |  | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |  |    |      |     |                                     |                          |
|      |      |                    |  |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                                |                                 |                |                           |                       |                          |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action<br>Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng           | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |

NOTE: Date & initial all entries

Date: Wednesday, 1/23/2008 11:25:36 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 36895A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description:

28.0

D356411

WEARSHOE



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

WEARSHOE

Batch: B 34805

BR

29.0

D35649

WEARSHOE



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

WEARSHOE

Batch: B 36637

BR

30.0

D35645

WEARSHOE



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

WEARSHOE

Batch: B 36338

BR

31.0

D25943

O-Ring



Comment: Qty.: 16.0000 Each(s)/Unit Total: 16.0000 Each(s)

O-Ring

Batch: B 27168

BR

32.0

D25941

Plug



Comment: Qty.: 16.0000 Each(s)/Unit Total: 16.0000 Each(s)

Plug

Batch: B 36307

BR

33.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates

A/R Sikaflex-291 M 105585

Sikaflex expire date: 08-07

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

BR 08-02-04

BR 08-02-04

| W/O: |      | WORK ORDER CHANGES |  |    |      |     |                                     |                          |
|------|------|--------------------|--|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   |  | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |  |    |      |     |                                     |                          |
|      |      |                    |  |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: PD Date: 08/02/07  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                                |                                 |                |                           |                       |                          |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action<br>Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng           | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |

NOTE: Date & initial all entries



Date: Wednesday, 1/23/2008 11:25:36 AM

User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SKID TUBE ASSEMBLY

Job Number: 36895A

Part Number: D205634041

Job Number:



Seq. #:

Machine Or Operation:

Description:

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive

AVR Sikaflex-291

Sikaflex expire date:

M105585  
08-07

BR 08-02-04

Q.

5-Wing Walk as per Dwg D2580 and QSI 005 4.4

Batch:

M106894

BR 08-02-04

Q.

34.0

QC5

INSPECT WORK TO CURRENT STEP



08/2/05



Comment: Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

35.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D205-634-041

Location:

PP-36895

PPP Rev:

11

AS 08/2/06

(X)

36.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

2008102/07

Job Completion



200812/06

①

W

| W/O: |      | WORK ORDER CHANGES |  |    |      |     |                                     |                          |
|------|------|--------------------|--|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   |  | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |  |    |      |     |                                     |                          |
|      |      |                    |  |    |      |     |                                     |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

| NCR: |      | WORK ORDER NON-CONFORMANCE (NCR) |                                |                                 |                |                           |                       |                          |
|------|------|----------------------------------|--------------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC<br>Section A   | Corrective Action<br>Section B |                                 |                | Verification<br>Section C | Approval<br>Chief Eng | Approval<br>QC Inspector |
|      |      |                                  | Initial<br>Chief Eng           | Action Description<br>Chief Eng | Sign &<br>Date |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |
|      |      |                                  |                                |                                 |                |                           |                       |                          |

**NOTE:** Date & initial all entries

**DART**

|                  |                |  |                        |
|------------------|----------------|--|------------------------|
| DESIGN<br>#      | DRAWN BY<br>RH | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA   |                        |
| CHECKED<br>#     | APPROVED<br>#  | DRAWING NO.<br>D2580                                       | REV. D<br>SHEET 1 OF 3 |
| DATE<br>07.02.27 |                | TITLE<br>205 SKIDTUBE ASSEMBLY                             | SCALE<br>NTS           |
| A                | 96.09.16       | NEW ISSUE  |                        |
| B                | 96.12.02       | AS MANUFACTURED  |                        |
| C                | 98.08.26       | REDRAWN, INCLUDED DEO 9094/9097                            |                        |
| D                | 07.02.27       | CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183 |                        |

**RELEASED**  
07-06-28 #

| QTY<br>-041 | QTY<br>-045 | Part Number   | Description       |
|-------------|-------------|---|-------------------|
| X           |             | D2580-041   | SKIDTUBE ASSEMBLY |
|             | X           | D2580-045   | SKIDTUBE ASSEMBLY |
|             |             |   |                   |
| 1           | 1           | D2500-1-190   | EXTRUSION         |
| 1           | 1           | D2576-3   | STEP              |
| 20          | 24          | D2579   | CROSS BOLT SPACER |
| 16          | 16          | D2594-1   | PLUG              |
| 16          | 16          | D2594-3   | O-RING            |
| 1           | 1           | D2596   | 205 WEB           |
| 1           | 1           | D2855   | AFT CAP           |
| 1           | 1           | D3564-5   | WEARSHOE          |
| 1           | 1           | D3564-9   | WEARSHOE          |
| 1           | 1           | D3564-11  | WEARSHOE          |
| 1           | 1           | D3564-13  | WEARSHOE          |
| 2           | 2           | D3566-1   | GASKET            |
| 1           | 1           | D3566-5   | GASKET            |
| 1           | 1           | D3566-13  | GASKET            |
|             |             |   |                   |
| 50          | 50          | ALS7-1032-130<br>or AKS7-1032-130<br>or AKS4-1032-130<br>or AELS-1032-130 | INSERT            |
| 50          | 50          | AN3C4A  | BOLT              |
| 2           | 2           | AN3-5A  | BOLT              |
| 50          | 50          | AN960C10L   | WASHER            |
| 2           | 2           | AN960JD10L  | WASHER            |

**GENERAL NOTES:**

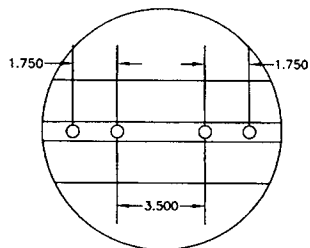
- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:  
SEE NOTES ON  
PAGE 2 FOR D2580-041 AND  
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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NO. 36895A

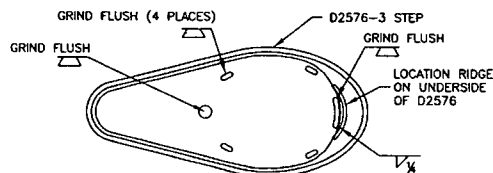
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**DETAIL A**  
SCALE 5:24

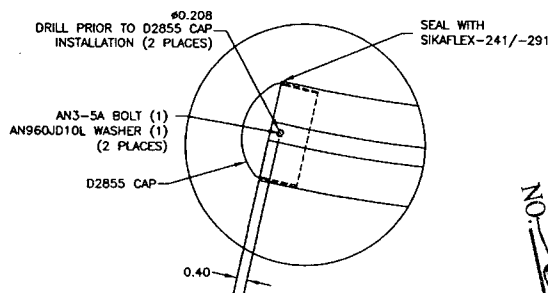


**DETAIL B**  
SCALE 5:24

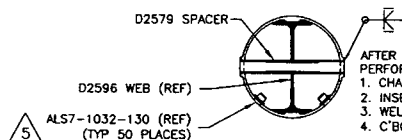


**RELEASED**  
07-06-28

**DETAIL C**  
SCALE 5:24



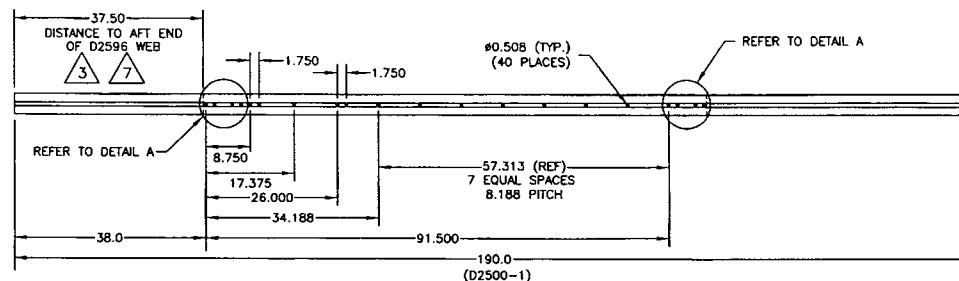
**SECTION D-D**  
SCALE 5:24



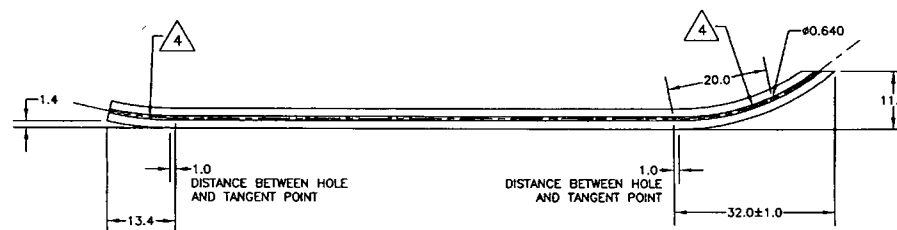
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NO: 36895A

- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
  2. INSERT D2579 SPACER (20 PLACES)
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE D2579 SPACER TO #0.437 X 1.00 DEEP

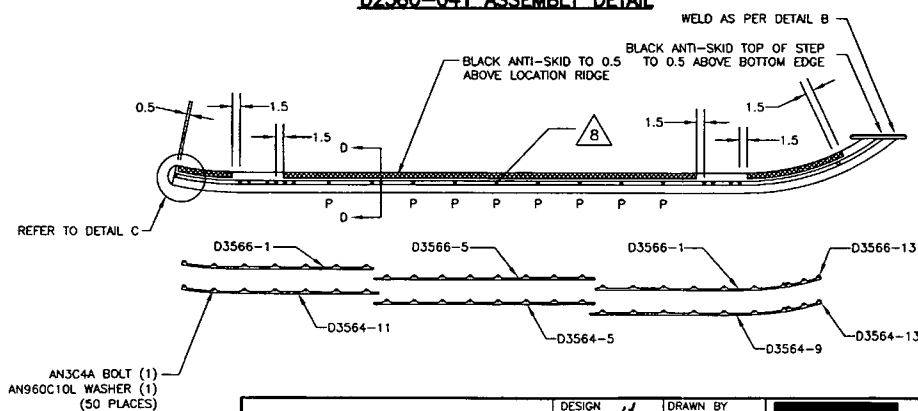
**D2580-1 DRILLING DETAIL**



**D2580-1 BENDING AND CUTTING DETAIL**



**D2580-041 ASSEMBLY DETAIL**



**D2580-041 NOTES**

- i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

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|          |          |                       |                             |
|----------|----------|-----------------------|-----------------------------|
| DESIGN   | DRAWN BY | <b>DART</b>           | DART AEROSPACE LTD.         |
| CHECKED  | APPROVED | DRAWING NO.           | HARRISBURG, ONTARIO, CANADA |
| DATE     |          | D2580                 | REV. D                      |
| 07.02.27 |          | TITLE                 | SHEET 2 OF 3                |
|          |          | 205 SKIDTUBE ASSEMBLY | SCALE                       |
|          |          |                       | 1:24                        |

RELEASED  
07 Dec 28

Diagram illustrating the grinding locations on a propeller cross-section:

- GRIND FLUSH (4 PLACES)
- GRIND FLUSH
- D2576-3 STEP
- LOCATION RIDGE ON UNDERSIDE OF D2576
- GRIND FLUSH

DRILL PRIOR TO D2855 CAP  
INSTALLATION (2 PLACES)

AN3-SA BOLT (1)  
AN96JDI10L WASHER (1)  
(2 PLACES)

D2855 CAP

SEAL WITH  
SIKAFLEX-241/-291

SEE NOTE ii)

0.40

Diagram illustrating the components of a wheel assembly:

- D2579 SPACER
- D2596 WEB (REF)
- AL57-1032-130 (REF) (TYP 50 PLACES)
- AFTER PERFORM:
  1. CHA
  2. INSU
  3. WEL
  4. C'B

AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR #0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO #0.437 X 1.00 DEEP

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NO. 36875A

37.50  
DISTANCE TO AFT END  
OF D2596 WEB

3  
7

1.750 1.750

0.508 (TYP.)  
(40 PLACES)

REFER TO DETAIL E

REFER TO DETAIL A

8.750

17.375

26.000

34.188

57.313 (REF)  
7 EQUAL SPACES  
8.188 PITCH

38.0

91.500

190.0  
(D2500-1)

Technical drawing of a curved pipe section. The drawing shows a side view of a pipe with a curved profile. Key dimensions and features include:

- Overall length: 51.340
- Distance from left end to first hole: 5.985
- Distance between first and second holes: 5.338 (REF)
- Distance from second hole to third hole: 3.630 (REF)
- Distance from third hole to fourth hole: 39.580
- Distance from fourth hole to end: 5.915
- Hole diameter:  $\phi 0.508$  (8 PLACES)
- End hole diameter:  $\phi 0.640$
- End flange thickness: 20.0
- End flange radius: 11.5
- Distance between hole and tangent point (left): 1.0
- Distance between hole and tangent point (right): 1.0
- Distance from left end to tangent point: 13.4
- Distance from right tangent point to end:  $32.0 \pm 1.0$
- Callout 4: Points to the end flange and the left tangent point.

WELD AS PER DETAIL F

BLACK ANTI-SKID TO 0.5 ABOVE LOCATION RIDGE

BLACK ANTI-SKID TOP OF STEP TO 0.5 ABOVE BOTTOM EDGE

0.5

1.5

1.5

H

NO C'BORE NO PLUG

NO C'BORE NO PLUG

NO C'BORE NO PLUG

D3566-1

D3566-5

D3566-1

D3566-13

D3564-11

D3564-5

D3564-9

D3564-13

AN3C4A BOLT (1)

AN960C10L WASHER (1)

(50 PLACES)

DESIGN

DRAWN BY

i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

ii) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

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07.02.27

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|                       |
|-----------------------|
| TITLE                 |
| 205 SKIDTUBE ASSEMBLY |

SCALE

NO. 141

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name Bazley E.  
Joint Welding Procedure GTAW  
Part number and Job number D305 634 041 / B367214

TEST WELDS REQUIRED

BASE METAL Aluminum  
Penetration Complete ☐ Partial ☒  
Current AC ☒ DC ☐

WELDING PROCESS Tig  
Single Weld ☒ Double Weld ☐  
Backing YES ☐ NO ☒

|              | Position                    | Vertical                    | Down <input type="checkbox"/>          | Up <input type="checkbox"/> |
|--------------|-----------------------------|-----------------------------|--|-----------------------------|
| Sheet Groove | 1G <input type="checkbox"/> | 2G <input type="checkbox"/> | 3G <input type="checkbox"/>            | 4G <input type="checkbox"/> |
| Tube Groove  | 1G <input type="checkbox"/> | 2G <input type="checkbox"/> | 5G <input checked="" type="checkbox"/> | 6G <input type="checkbox"/> |
| Sheet Fillet | 1F <input type="checkbox"/> | 2F <input type="checkbox"/> | 3F <input type="checkbox"/>            | 4F <input type="checkbox"/> |
| Tube Fillet  | 1F <input type="checkbox"/> | 2F <input type="checkbox"/> | 4F <input type="checkbox"/>            | 5F <input type="checkbox"/> |

Crossbolt Spacer Welded into Skidtube

TEST RESULTS

Visual Pass ☒ Fail ☐  
Penetration Pass ☒ Fail ☐  
Crossbolt Spacer Pass ☒ Fail ☐

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

Date of Test Coupon 080201 Qualifier Pat D. Neal